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# BEFORE THE BOARD OF PATENT APPEALS
# AND INTERFERENCES

Paper No. 21

Application Number: 09/330,755
Filing Date: June 11, 1999
Appellant(s): BERMAN, STUART B.

David B. Murphy
<u>For Appellant</u>

## EXAMINER'S ANSWER

This is in response to the appeal brief filed 4/2/2004.

*(1)    Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

*(2)    Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or

be directly affected by or have a bearing on the decision in the pending appeal is contained in the

brief.

*(3)    Status of Claims*

The statement of the status of the claims contained in the brief is correct.

*(4)    Status of Amendments After Final*

No amendment after final has been filed.

*(5)    Summary of Invention*

The summary of invention contained in the brief is correct.

*(6)    Issues*

The appellant's statement of the issues in the brief is correct.

*(7)    Grouping of Claims*

The rejection of claims 50-55 stands or falls together.

*(8)    Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

*(9)    Prior Art of Record*

| | | |
|---|---|---|
| 5,592,160 | BENNETT et al | 1-1997 |
| 4,809,269 | GULICK | 2-1989 |
| 5,341,476 | LOWELL | 8-1994 |

5,262,625                            TOM et al                            11-1993

*(10)*    ***Grounds of Rejection***

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

1.      The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.      Claims 50, 51, 53, and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Bennett et al (USPN 5,592,160) in view of Gulick (USPN 4,809,269) in further view of Lowell

(USPN 5,341,476).

3.      Regarding claims 50, 53, and 54, Bennett discloses a method and a port control module

(ref. 340) for use in a fiber channel switching fabric comprising (col. 4, lines 22-45): a fiber

channel input/output port for connection to a link (col. 1, line 57-col. 2, line 5), an

encoder/decoder in communication with the input/output port (col. 2, lines 37-63) where

"encoding" and "decoding" indicates the presence of an encoder/decoder, and a buffer (col. 2,

lines 15-22 and col. 4, lines 39-45); where the module places received fiber channel data in the

buffer before sending the data to another module (col. 2, lines 15-18), and monitors the buffer for

an overflow condition (col. 5, lines 49-66) with an overflow buffer indicating a monitoring of an

overflow condition. Bennett also discloses buffer overrun prevention (ref. 436, overflow buffer)

(col. 5, lines 58-66). Bennett possibly does not disclose the inclusion of buffer overrun

prevention logic between the encoder/decoder and the buffer. Gulick teaches, in a port controller,

having buffer overrun prevention logic before the buffer (col. 30, lines 25-39). Since the buffer

overrun prevention logic is before the buffer, an obvious place to locate it would be between the

buffer and the encoder/decoder. Gulick uses the buffer prevention logic in order to signal the

system to terminate a packet that has been corrupted by buffer overflow through the use of tags

(col. 30, lines 34-39). It would have been obvious to one of ordinary skill in the art of data

communications to include buffer prevention logic before the buffer to signal the system that a

data packet has been corrupted due to buffer overrun. Bennett in view of Gulick possibly does

not disclose the buffer overrun prevention logic tags, but does not terminate, words that overrun

the buffer. Lowell discloses in a buffering system that a variety of overflow buffer configurations

are possible, including a "Reject" type of buffering in which the newest data in the buffer is

overwritten by the overflow data (col. 3, lines 31-33; col. 7, lines 4-25, esp. col. 7, lines 15-25;

and col. 8, lines 50-66). It is obvious that by using a "Reject" type of buffering that the port

control module of Gulick is relieved of the need to terminate packets. Instead, once an overflow

is detected, the port control module simply needs to flag the packets that are in overflow and pass

the packets to the buffer where all overflowed packets will be terminated when a newer

overflowed packet overwrites it. Thus it would have been obvious to one of ordinary skill in the

art at the time of the invention to have the buffer overrun prevention logic tag, but not terminate,

words that overrun the buffer in order to relieve the prevention logic of the task of terminating

the packet before it reaches the buffer.

4.      Regarding claim 51, Bennett in view of Gulick in further view of Lowell discloses that

the buffer is FIFO (Bennett: col. 2, lines 60-63; Gulick: col. 30 lines 25-27; and Lowell: col. 7,

lines 15-20).

5.      Claims 52 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bennett

et al (USPN 5,592,160) in view of Gulick (USPN 4,809,269) in further view of Lowell (USPN

5,341,476) as applied to claims 50 and 54 above, and further in view of Tom et al. (USPN

5,262,625).

6.      Regarding claims 52 and 55, referring to claims 50 and 54, Bennett in view of Gulick in

further view of Lowell discloses that the buffer overrun prevention logic sets tag bit to a value

indicative of overrun conditions (Gulick: col. 30 lines 30-39). Bennett in view of Gulick in

further view of Lowell does not specifically disclose that the tagged value is unique. Tom

discloses having the tagged values be unique in order for the system to distinguish between

unique conditions associated with each tag (col. 10 lines 11-22). It would have been obvious to

one of ordinary skill in the art of data communications to have the tag be unique in order for the

system to distinguish between the unique conditions associated with each tag.

*(11)    Response to Argument*

On page 4 of the Appeal Brief, Applicant argues that Bennett "contains absolutely no

teaching or suggestion regarding the claimed buffer 'overrun' prevention logic as explicitly

claimed." Examiner agrees that Bennett does not teach the claimed overrun prevention logic

which is why Examiner combined Bennett with Gulick and Lowell. In response to applicant's

arguments against the references individually, Examiner submits that one cannot show

nonobviousness by attacking references individually where the rejections are based on

combinations of references.  See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re*

*Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Examiner uses Bennett as a base

reference in order to teach a fiber channel buffering system in addition to the encoder/decoder

combination. Examiner proceeds to modify Bennett, using the teachings of Gulick and Lowell, to arrive at the claimed buffer overrun prevention logic. Therefore Examiner maintains that, since the rejection is based on a combination of references, Bennett is not required to teach the claimed buffer overrun prevention logic given that the other references in the combination provide such teachings.

Applicant also distinguishes between "overflow" and "overrun" in the above argument stating that the Bennett reference "addresses the issue of 'overflow', not 'overrun', which is the clearly recited claim limitation". In response, Examiner submits that "overrun" and "overflow" are closely related concepts which both describe a full buffer that receives additional information. Specifically "overflow" typically refers to a buffer that runs out of space while data is being received while "overrun" typically refers to a buffer that cannot accept data at the rate at which it is being received. Given that both "overrun" and "overflow" are used to describe a full buffer that receives additional data, Examiner submits that Bennett is in the same field as the claims.

Furthermore, Examiner, respectfully, notes that Applicant admits, "Bennett et al. truly teaches nothing beyond what is acknowledged in the claim to be old, i.e., that portion before 'the improvement comprising'". Therefore, even if Bennett is found to be deficient, which Examiner maintains is not the case, Examiner submits that the rejection should still be sustained given that Applicant has admitted that Bennett's teachings are not necessary in order to reject the claims since Applicant has admitted such teachings as prior art.

On pages 4-5 of the Appeal Brief, Applicant argues that "Gulick is not in the Fibre Channel field, rather, it is directed to a dual-port timing contoller". Through this statement,

Applicant seems to be arguing that Gulick and Bennett are not analogous art, and therefore Gulick and Bennett are not combinable. In response, Examiner, respectfully, submits that, although Gulick is not directed to the Fibre Channel field, Gulick and Bennett are properly combinable since both Gulick and Bennett are concerned with buffering of data. Specifically, both Gulick and Bennett are concerned with the loss of data that occurs when a full buffer receives additional data. Given this nexus, Examiner maintains that Bennett and Gulick are combinable.

In addition, Applicant argues that the "Office Action makes no attempt to identify any teaching or suggestion to combine these teachings". Examiner, respectfully, disagrees. In the Office Action, Examiner explicitly states "Gulick uses the buffer prevention logic in order to signal the system to terminate a packet that has been corrupted by buffer overflow through the use of tags (col. 30, lines 34-39)" (para. 6 of Final Rejection). In addition, Examiner further submits that Gulick provides additional relevant teachings in col. 24, lines 15-24 and col. 24, lines 46-56. In these passages, Gulick teaches that when buffer overrun occurs, the bytes that overrun the buffer are dropped and the last byte in the buffer is tagged wherein the tagging of the byte signals the system to empty the buffer. Examiner submits that these teachings suggest tagging the last data placed in a buffer during an overrun in order to clear the buffer of the data corrupted by the overrun so that the buffer can accept new data. As such, Examiner maintains that Gulick provides a motivation for the combination where the motivation is to signal the system, through the use of tags, that data stored in a buffer should be emptied (terminated) during an overrun.

Applicant goes on to argue that Gulick teaches the opposite of the claimed invention since Gulick terminates the data that overruns the buffer. Examiner agrees which is why Examiner combined Gulick with Lowell. In response to applicant's arguments against the references individually, Examiner submits that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Examiner uses Lowell to remedy the deficiency of Gulick in order to arrive at the claimed buffer overrun prevention logic. Therefore, Examiner maintains that, since the rejection is based on a combination of references, Gulick is not required to teach that the words that overrun the buffer are not terminated given that the other references in the combination provide such teachings.

On pages 5-6 of the Appeal Brief, Applicant argues that there is no teaching to combine Lowell with Bennett and Gulick. Examiner, respectfully, disagrees. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Lowell teaches that the data that overruns a buffer can be handled in multiple ways. One way that Lowell teaches is to drop all overrun data. This is the solution used by Gulick. Lowell also teaches that the overrun data can overwrite either the youngest data in the buffer or the oldest data in the buffer. In other

words, Lowell teaches "buffer prevention logic" that does not terminate words that overrun the buffer. It is implicit that, by not terminating words that overrun the buffer, the buffer prevention logic saves the latest data at the expense of older data. It is also implicit that, by not terminating words that overrun the buffer, the buffer prevention logic is not required to identify the overrun words for subsequent termination prior to the buffer since all words are written to the buffer. Therefore, Lowell suggests that it is beneficial not to terminate the words in order to ensure that the most recent data is saved in the buffer. As such, Examiner maintains that there is a suggestion to combine the teachings.

In short, Bennett teaches a data storage mechanism. Gulick improves Bennett by including a tagging mechanism which signals a system to empty a buffer that contains data corrupted by overrun. Lowell further refines this system by overwriting the oldest data with the newest data to ensure that the newest data is saved at the expense of the oldest data until the overrun is cleared. Given the prior art, Examiner submits that Applicant's claims are not patentable because the prior art teaches the limitations of Applicant's claims. Given that all of the features in the claims are known in the prior art as well as motivation for combining these features, if a patent should be issued containing these claims, the patent will be based on an obvious combination of well-known features rather than on a novel invention.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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April 16, 2004

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